

PRIORITY**SECRET**

out 68912

8 DEC 69 206 43Z

P 081558Z DEC 69

FM NPIC WASHDC

TO RCH0AAA/SAC OFFUTT AFB OMAHA NEBRASKA

RCH0AAA/544TH ARTW, OFFUTT AFB OMAHA NEBRASKA

RUHHABA/548TH RTG, HICKAM AFB, HAWAII

RUCRJCS/DIA

RUEFHQA/HQ USAF

BT

S E C R E T. CITE NPIC 7552.

HQ USAF FOR AFIGOS, AFXOTR, AFNICAD

SAC FOR DIRI, DOSR, DISD

DIA FOR DIAXX-2

SUBJECT: EVALUATION OF GIANT NAIL MISSION GA T138, FLOWN

8 NOVEMBER 1969

1. IMAGE QUALITY: THE IMAGE QUALITY IS POOR AND UNSUITABLE FOR INTERPRETATION PURPOSES DUE TO AN UNDEREXPOSED CONDITION OF THE ENTIRE MISSION. CLOUD COVER OBSCURES APPROXIMATELY 65 PERCENT OF THE ENTIRE MISSION.

2. MISSION DATA:

A. MISSION NUMBER: GA T138, 8 NOV 69

PAGE 2 RUEADJU 0029 S E C R E T

B. CAMERA: IRIS II, SER. NO: 8010

C. A/C NUMBER: 340

D. MODE: STEREO

E. T/O: UNK. C/O: UNK.

F. FILM TYPE: UNK. FILTER: UNK.

G. CHEMISTRY: UNK. PROCESSING FACILITY 548TH RTG

H. AVG. GAMMA: UNK.

3. ORIGINAL NEGATIVE:

A. EXPOSURE: THE MISSION RECORD IS UNDEREXPOSED THROUGHOUT. THE FOLLOWING ASA DIFFUSE TRANSMISSION DENSITY READINGS GIVEN BELOW ARE INDICATIVE OF THE EXPOSURE THROUGHOUT THE MISSION. THE D-MAX OF THE CLOUDS IS INCLUDED TO INDICATE THE ABSOLUTE MAXIMUM DENSITY OF THE RECORD.

CAN	FRAME	D-MIN	D-MAX	BASE & FOG	DELTA-D	TARGET
1	29	0.42	0.46	0.40	0.04	TERRAIN
1	29	--	1.23	--	--	CLOUDS
1	64	0.42	0.46	0.40	0.04	TERRAIN
1	64	--	1.33	--	--	CLOUDS
2	167	0.43	0.48	0.40	0.05	TERRAIN
2	167	--	1.23	--	--	CLOUDS

PAGE 3 RUEADJU 0029 S E C R E T

CAN	FRAME	D-MIN	D-MAX	BASE & FOG	DELTA-D	TARGET
2	181	0.51	1.10	0.40	0.59	TERRAIN
2	181	--	2.35	--	--	CLOUDS
3	190	0.50	0.63	0.40	0.13	TERRAIN
3	190	--	1.93	--	--	CLOUDS
4	280	0.44	0.85	0.41	0.41	TERRAIN
4	280	--	1.98	--	--	CLOUDS
4	349	0.43	0.52	0.41	0.09	TERRAIN
4	349	--	1.63	--	--	CLOUDS

B. DENSITY AND CONTRAST: THE DENSITY IS VERY THIN AND THE CONTRAST IS LOW THROUGHOUT THE MISSION.

DISTRIBUTION	
CY	OFFICE
1	FILE
2	CABLE SEC.
	FPAB/RD
	SECUR.
3/4	TSSG/ARSD
	PSG/OC
	RRD
	REPRO
	D-MAX
	LEG
	PROD
	SCIEN
	WEST
	EAST
	M&S
	PGM
5	IAS
	DIA-XX4
	SPAD
	DIA-AP
	CMX

25X1

ADVANCE CY
SANITIZED
WITH TEXT

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

--2--

C. IMAGED DEGRADATIONS:

(1) NUMEROUS FINE MINUS DENSITY LINES, PARALLEL TO THE MAJOR AXIS OF THE FILM, ARE PRESENT THROUGHOUT THE MISSION. THESE LINES ARE APPARENTLY THE RESULT OF FOREIGN MATTER IN THE EXPOSING SLIT. THE DEGRADATION IS GENERALLY OF A MINOR NATURE, HOWEVER; IF NOT CORRECTED COULD EXPAND INTO A MORE SERIOUS PROBLEM.

(2) A LIGHT LEAK INDUCED FOG PATTERN, IN THE FORM OF AN EQUIPMENT SHADOWGRAPH, LOCATED 22.8 INCHES FROM THE SUPPLY END OF THE FRAME, IS PRESENT ON EVERY FRAME OF THE MISSION.

(3) ANOTHER LIGHT LEAK INDUCED FOG PATTERN IS PRESENT

PAGE 4 RUEADJU 0029 S E C R E T

26.6 INCHES FROM THE SUPPLY END OF MOST AFT FRAMES.

(4) A PLUS DENSITY BAND EXTENDING ACROSS THE WIDTH OF THE FILM, PARALLEL TO THE MINOR AXIS IS PRESENT 5.25 INCHES FROM THE SUPPLY END OF MOST AFT FRAMES. A SIMILAR MARKING IS PRESENT 11.25 INCHES FROM THE SUPPLY END OF MOST FWD FRAMES. THESE MARKINGS APPEAR TO BE THE RESULT OF AN ELECTRO-STATIC DISCHARGE FROM A TRANSPORT ROLLER.

D. PHYSICAL DEGRADATIONS:

(1) AN ULTRASONIC SPLICE IS LOCATED IN FRAME 107.

(2) THE TITLING EXTENDS FROM THE FORMAT A DISTANCE OF 0.10 INCH ON MANY FRAMES OF THE MISSION.

E. DATA RECORDING EQUIPMENT: FUNCTIONED PROPERLY UP TO THE CAMERA MALFUNCTION DESCRIBED IN PARAGRAPH F.

F. OTHER DEGRADATIONS:

(1) NUMEROUS PROCESSING STAINS ARE PRESENT INTERMITTENTLY THROUGHOUT THE MISSION MATERIAL. THESE STAINS APPEAR AS BROWNISH BANDS, PERPENDICULAR TO THE MINOR AXIS OF THE FILM. IN ADDITION, NUMEROUS, SMALL TRANSLUCENT SPOTS ARE APPARENT AT RANDOM THROUGHOUT.

(2) THE CAMERA MALFUNCTIONED INTERMITTENTLY, (A TOTAL OF

PAGE 5 RUEADJU 0029 S E C R E T

22 TIMES) FROM FRAME 172 TO THE END OF THE MISSION. FOLLOWING IS A BRIEF DESCRIPTION OF THE MALFUNCTION AND A HYPOTHESIS OF THE CAUSE.

(3) THE SEQUENCE OF EVENTS, AS EVIDENCED BY THE FILM INDICATES THAT THE CAMERA GIMBAL SYSTEM FAILED TO ADVANCE TO THE PROPER POSITION (FWD/AFT). THIS FAILURE MODE GENERALLY AFFECTED TWO EXPOSURES BUT IN A FEW INSTANCES UP TO FOUR EXPOSURES ARE INVOLVED. LISTED BELOW IS AN EXAMPLE OF THE EVENTS WHICH OCCURRED DURING THE FAILURE MODE.

(A) NORMAL FWD EXPOSURE

(B) AFT EXPOSURE

(C) UP TO FOUR MORE AFT EXPOSURES

(D) NORMAL FWD EXPOSURE

(4) ITEM 2 (THE AFT EXPOSURE) REPRESENTS THE BEGINNING OF THE FAILURE MODE. THIS FRAME DOES NOT HAVE AN IMAGED CENTER FIDUCIAL MARK AND THE IMAGERY EXTENDS UP TO 5 INCHES BEYOND THE NORMAL SUPPLY END OF THE FRAME. THE NEXT FRAME IS ALSO AN AFT EXPOSURE AND THE IMAGERY EXTENDS BEYOND THE NORMAL TAKE-UP END A DISTANCE OF ABOUT 6 INCHES.

(5) ALL FRAMES EXPOSED DURING THE FAILURE MODE DO NOT HAVE

--3--

PAGE 6 RUEADJU 0029 S E C R E T

A CENTER FIDUCIAL OR DATA CHAMBER IMAGE WITH THE EXCEPTION IF THE FRAME OBTAINED PRIOR TO INITIATION OF NORMAL OPERATION. THE CENTER FIDUCIAL AND DATA CHAMBER FOR THIS FRAME ARE IMAGED PROPERLY; HOWEVER, THE EXTENDED IMAGERY FROM THE TWO ADJACENT FRAMES OVERLAP THE DATA BLOCK. IN ADDITION, ERRONEOUS SCAN ANGLE IMAGES WERE NOTED DURING THE FAILURE MODE.

(6) THE SEQUENCE OF OPERATION (MISSING CENER FIDUCIAL AND DATA BLOCK IMAGES, EXTEND FORMAT IMAGERY, AND CONTINUING AFT OR FWD EXPOSURES) SUGGEST THAT THE ENCODER DID NOT RELAY THE PROPER SIGNAL. THIS HYPOTHESIS IS SUPPORTED BY THE SEQUENCE OF ENCODER SIGNALS WHICH ARE AS FOLLOWS:

(A) PULSE 876 - CAPPING SHUTTER OPEN.

(B) PULSE 1440 - CENTER OF SCAN INDICATOR (CENTER FIDUCIAL) EXPOSED, DATA CORRELATION SIGNAL IS RELAYED.

(C) PULSE 1996 - CAPPING SHUTTER CLOSED.

(D) PULSE 2000 - STEREO MOTOR DRIVES GIMBAL TO NEXT EXPOSURE POSITION.

(E) PULSE 2560 - DATA CHAMBER EXPOSED.

(7) THE CAMERA MALFUNCTION APPARENTLY OCCURRED AS A RESULT OF A BREAK IN THE SEQUENCE OF ENCODER SIGNALS BEGINNING WITH PULSE

PAGE 7 RUEADJU 0029 S E C R E T

1440. THIS SIGNAL WAS NOT RELAYED PROPERLY AND THEREFORE PROPER ACTIVATION OF THE REMAINING EVENTS WAS ELIMINATED; IE, THE CENTER FIDUCIAL WAS NOT IMAGED, THE CAPPING SHUTTER DID NOT CLOSE, THE GIMBAL DID NOT ADVANCE TO THE NEXT EXPOSURE POSITION AND THE DATA CHAMBER WAS NOT IMAGED.

G. THERE ARE APPROXIMATELY 356 FRAMES ON THIS MISSION; HOWEVER; ONLY THE FIRST 95 FRAMES ARE TITLED.

4. POSITIVES: POSITIVES WERE NOT PRODUCED FROM THIS MISSION.

GP-1

S E C R E T

END OF MESSAGE